

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for scheduling mobile station uplink transmissions by a base station comprising steps of:

receiving scheduling information from ~~at least one~~ a mobile station ~~of a plurality of mobile stations~~, wherein the scheduling information comprises at least one of a queue status and a power status of the ~~at least one~~ mobile station;

~~selecting a mobile station of the plurality of mobile stations and~~ determining an uplink channel scheduling assignment for the ~~selected~~ mobile station using at least one of the scheduling information and a base station interference metric and a link quality corresponding to the selected mobile station; and

transmitting the uplink channel scheduling assignment to the ~~selected~~ mobile station, wherein the uplink channel scheduling assignment comprises a maximum traffic channel to control channel power ratio that the mobile station is allowed to use in a subsequent reverse link transmission.

2. (Canceled)

3. (Original) The method of claim 1, wherein the power status corresponds to a power level of a Dedicated Physical Control Channel (DPCCH).

4. (Original) The method of claim 1, wherein the power status is based on a difference between a Dedicated Physical Control Channel (DPCCH) power level and a maximum power level supported by the mobile station.

5. (Original) The method of claim 1, wherein the queue status corresponds to a size of a data queue.

6. (Original) The method of claim 5, wherein the queue status further indicates a size of a layer 3 signaling queue.

7. (Original) The method of claim 5, wherein the queue status further indicates that a layer 3 signaling queue is non-empty.

8. (Currently Amended) The method of claim 1, further comprising conveying base station interference information to the ~~selected~~ mobile station via a forward link control channel.

9. (Currently Amended) The method of claim 1, wherein the link quality is one or more of a ~~the~~ link quality of an uplink channel from the ~~selected~~ mobile station and a link quality of a downlink channel from the base station to the mobile station.

10. (Canceled)

11. (Previously Presented) A method for scheduling a mobile station transmission comprising:

scheduling, by a base station of a plurality of base stations, a mobile station of a plurality of mobile stations for a transmission interval based on scheduling information received from each mobile station of the plurality of mobile stations and further based on a link quality metric;

conveying base station interference information to the selected mobile station via a forward link control channel;

receiving, by the base station from the scheduled mobile station, a first transmission of data, which transmission of data is conveyed by the mobile station during the transmission interval and comprises transport format and resource-related information (TFRI);

decoding the first transmission of the data;

when the first transmission of the data is not successfully decoded, receiving, by the base station, communications from the scheduled mobile station corresponding to at least one retransmission of the data;

combining, by the base station, each of the at least one retransmission of the data with the previously received data to produce combined data until the first to occur of a

successful decoding of the combined data or a flushing of a Hybrid Automatic Repeat Request (H-ARQ) buffer;

when one of the first transmission of data and the combined data is successfully decoded, conveying an acknowledgment to the mobile station; and

in response to conveying the acknowledgment, flushing the H-ARQ buffer.

12. (Original) The method of claim 11, wherein flushing the Hybrid Automatic Repeat Request (H-ARQ) buffer comprises in response to conveying the acknowledgment, receiving an instruction to flush the H-ARQ buffer and flushing the buffer.

13. (Canceled)

14. (Original) The method of claim 11, further comprising, when the combined data is not successfully decoded prior to an expiration of a timer, flushing the Hybrid Automatic Repeat Request (H-ARQ) buffer.

15. (Original) The method of claim 11, further comprising:

determining a reverse link power control metric;

comparing the reverse link power control metric to an inner loop power control setpoint; and

flushing the Hybrid Automatic Repeat Request (H-ARQ) buffer when the reverse link power control metric compares unfavorably with the inner loop power control setpoint.

16. (Original) The method of claim 11, further comprising:

receiving a new data indicator; and

flushing the Hybrid Automatic Repeat Request (H-ARQ) buffer based on a state of the received data indicator.

17. (Original) The method of claim 11, wherein the scheduling information is received via a first reverse link control channel and the transport format and resource-related information (TFRI) is received via a second reverse link control channel.

18. (Original) The method of claim 11, wherein the scheduling information is received via a first reverse link control channel and the transport format and resource-related information (TFRI) is blindly detected by a receiving base station.

19. (Original) The method of claim 11, wherein the scheduling information comprises power status and queue status information.

20. (Original) The method of claim 19, wherein the power status corresponds to a power level of a Dedicated Physical Control Channel (DPCCH)

21. (Original) The method of claim 19, wherein the power status is based on a difference between a Dedicated Physical Control Channel (DPCCH) power level and the maximum power level supported by the mobile station.

22. (Canceled)

23. (Original) The method of claim 22, wherein the queue status further indicates a size of a layer 3 signaling queue.

24. (Original) The method of claim 22, wherein the queue status further indicates that a layer 3 signaling queue is non-empty.

25. (Original) The method of claim 11, further comprising conveying base station interference information to the selected mobile station via a forward link control channel.

26. (Original) The method of claim 25, further comprising mapping one or more sub-frames of the transmission interval to associated transport format and resource-related information (TFRI).

27. (Original) The method of claim 25, further comprising determining a maximum Enhanced Uplink Dedicated Transport Channel (EUDCH) to Dedicated Physical Control

Channel (DPCCH) (DPPCH) power ratio for the mobile station based on base station interference information.

28. (Original) The method of claim 11, wherein scheduling comprises informing the mobile station of a number of sub-frames on which the mobile station may transmit and a location of the sub-frames in the transmission interval.

29. (Currently Amended) A method for transmitting data by a mobile station comprising steps of:

receiving, at the mobile station, interference information associated with, and conveyed to the mobile station by, a base station;

~~determining selecting~~, by the mobile station, ~~transport format and resource-related information (TFRI)~~ a modulation and coding scheme based on the received interference information;

transmitting data in a first reverse link channel; and

transmitting ~~the TFRI~~ an indication of the selected modulation and coding scheme in a second reverse link channel, wherein the ~~TFRI~~ selected modulation and coding scheme can be used to demodulate and decode the transmitted data.

30. (Original) The method of claim 29, wherein the transport format and resource-related information (TFRI) is transmitted via a second reverse link control channel.

31. (Previously Presented) The method of claim 29, wherein receiving comprises receiving a scheduling assignment that comprises the interference information associated with a base station.

32. (Original) The method of claim 31, wherein receiving a scheduling assignment comprises receiving a plurality of scheduling assignments from a plurality of base stations, wherein each scheduling assignment of the plurality of scheduling assignments is associated with interference information, and wherein the method further comprises choosing a scheduling assignment of the plurality of scheduling assignments based on the associated interference information.

33. (Original) The method of claim 32, wherein the interference information associated with each scheduling assignment comprises transport format and resource-related information (TFRI).

34. (Original) The method of claim 32, further comprising determining the corresponding transport format and resource-related information (TFRI) transmitted in the second reverse link channel based on the TFRI of only one base station of the plurality of base stations.

35. (Canceled)

36. (Previously Presented) The method of claim 29, wherein receiving comprises receiving interference information from a plurality of base stations and wherein determining comprises determining the corresponding transport format and resource-related information (TFRI) transmitted in the second reverse link channel based on interference information of only one base station of the plurality of base stations.

37. (Original) The method of claim 36, wherein determining comprises determining the transport format and resource-related information (TFRI) based on a base station with a largest Enhanced Uplink Dedicated Transport Channel (EUDCH) to Dedicated Physical Control Channel (DPCCH) (DPPCH) power ratio.

38. (Original) The method of claim 29 wherein the first reverse link channel and the second reverse link channel are time multiplexed on a same physical control channel such that, in a given transmission interval, either a first reverse link channel ten (10) millisecond (ms) frame format is used or a second reverse link channel two (2) millisecond (ms) frame format is used.

39. (Original) The method of claim 38, wherein when there is not a scheduled transmission interval then the first reverse link channel ten (10) millisecond (ms) frame

format is used and when there is a scheduled transmission interval then the second reverse link channel two (2) millisecond (ms) frame format is used.

40. (Original) The method of claim 29, wherein the second reverse link channel has a first part and a second part, wherein the second part can be decoded separate from the first part, and wherein the first part comprises block size and modulation and coding information and the second part comprises Hybrid Automatic Repeat Request (H-ARQ) and Incremental Redundancy version information.

41. (Currently Amended) A method for controlling communications with a mobile station by a base station comprising steps of:

storing, by the base station, traffic data from the mobile station in a traffic data buffer;

determining a reverse link signal quality metric at the base station;

comparing the reverse link signal quality metric to a threshold; and

when the reverse link signal quality metric compares unfavorably with the threshold, flushing the traffic data buffer.

42. (Currently Amended) The method of claim 41, wherein the reverse link quality metric comprises a reverse link power control metric and wherein comparing comprises comparing the reverse link power control metric to an inner loop power control setpoint.

43. (Currently Amended) The method of claim 42, wherein the threshold comprises a first threshold and wherein the reverse link quality metric compares unfavorably with a threshold when a ratio of the reverse link power control metric to an inner loop power control setpoint exceeds a second threshold.

44. (Canceled)

45. (Original) A method for controlling communications with a mobile station by a base station comprising steps of:

storing, by the base station, traffic data from the mobile station in a traffic data buffer;

transmitting, by the base station, first control data to the mobile station on a downlink control channel;

upon transmitting the first control data, starting, by the base station, a timer; and
when a predetermined period of time expires prior to receiving second control data from the mobile station on an uplink control channel, flushing the traffic data buffer.

46. (Currently Amended) A method for controlling communications with a mobile station by a base station comprising steps of:

determining, by the base station, a link quality metric at the base station;
comparing, by the base station, the link quality metric to a threshold; and
when the link quality metric compares unfavorably with the threshold, deallocating, by the base station, demodulation resources allocated to a first uplink control channel associated with the mobile station while maintaining allocation of demodulation resources associated with a second uplink control channel that is associated with the mobile station, wherein each of the demodulation resources allocated to a first uplink control channel and the demodulation resources associated with a second uplink control channel demodulation resource comprises a RAKE finger.

47. (Original) The method of claim 46, wherein the link quality metric comprises a reverse link power control metric and wherein comparing comprises comparing the reverse link power control metric to an inner loop power control setpoint.

48. (Original) The method of claim 47, wherein the threshold comprises a first threshold and wherein the link quality metric compares unfavorably with a threshold when a ratio of the reverse link power control metric to an inner loop power control setpoint exceeds a second threshold.

49. (Canceled)

50. (Currently Amended) A method for controlling communications with a mobile station by a base station comprising steps of:

transmitting, by the base station, first control data to the mobile station on a downlink control channel;

upon transmitting the first control data, starting, by the base station, a timer; and
when a predetermined period of time expires prior to receiving second control data from the mobile station on an uplink control channel, deallocating, by the base station, demodulation resources allocated to a first uplink control channel associated with the mobile station while maintaining allocation of demodulation resources associated with a second uplink control channel that is associated with the mobile station, wherein each of the demodulation resources allocated to a first uplink control channel and the demodulation resources associated with a second uplink control channel demodulation resource comprises a RAKE finger.

51-54. (Canceled)

55. (New) The method of claim 1, further comprising receiving, from the mobile station, an indication of a selection of a modulation and coding scheme that is based on the transmitted a maximum traffic channel to control channel power ratio and that is for an uplink transmission.

56. (New) The method of claim 55, wherein receiving an indication of a selection of a modulation and coding scheme comprises receiving an indication of a selection of transport format and resource-related information (TFRI) that is based on the maximum traffic channel to control channel power ratio and that is for an uplink transmission.

57. (New) The method of claim 56, further comprising selecting, by the mobile station, the transport format and resource-related information (TFRI) based on the maximum traffic channel to control channel power ratio.

58. (New) The method of claim 1, further comprising:

receiving, from the selected mobile station, a first transmission of data, which transmission of data is conveyed by the mobile station during the transmission interval and comprises transport format and resource-related information (TFRI);

decoding the first transmission of the data;

when the first transmission of the data is not successfully decoded, receiving communications from the selected mobile station corresponding to at least one retransmission of the data;

combining each of the at least one retransmission of the data with the previously received data to produce combined data until the first to occur of a successful decoding of the combined data or a flushing of a Hybrid Automatic Repeat Request (H-ARQ) buffer;

when one of the first transmission of data and the combined data is successfully decoded, conveying an acknowledgment to the selected mobile station; and

in response to conveying the acknowledgment, flushing the H-ARQ buffer.

59. (New) The method of claim 58, wherein the scheduling information is received via a first reverse link control channel and the transport format and resource-related information (TFRI) is received via a second reverse link control channel.

60. (New) A method for scheduling a mobile station uplink transmission comprising steps of:

transmitting scheduling information by the mobile station, wherein the scheduling information comprises at least one of a queue status and a power status of the mobile station;

receiving, by the mobile station from a base station, an uplink channel scheduling assignment, wherein the uplink channel scheduling assignment comprises a maximum power margin target;

selecting, by the mobile station and based on the maximum power margin target, a modulation and coding scheme for an uplink transmission; and

transmitting, by the mobile station, an indication of the selected modulation and coding scheme.

61. (New) The method of claim 60, wherein selecting comprises selecting, by the mobile station, transport format and resource-related information (TFRI) based on the received interference information and wherein transmitting comprises transmitting an indication of the selected TFRI.

62. (New) A mobile station comprising:

means for transmitting scheduling information, wherein the scheduling information comprises at least one of a queue status and a power status of the mobile station;

means for receiving, from a base station, an uplink channel scheduling assignment that is based on the scheduling information, wherein the uplink channel scheduling assignment comprises a maximum traffic channel to control channel power ratio;

means for selecting a modulation and coding scheme based on the maximum traffic channel to control channel power ratio and for an uplink transmission; and

means for transmitting an indication of the selected modulation and coding scheme to the base station.

63. (New) The mobile station of claim 62, wherein selecting a modulation and coding scheme comprises selecting transport format and resource-related information (TFRI) based on the maximum traffic channel to control channel power ratio and wherein transmitting an indication of the selected modulation and coding scheme comprises transmitting an indication of the selected TFRI.